

Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) A gateway unit that is connected to a packet network and a PSTN and realizes a real-time facsimile communication between a facsimile apparatus on the PSTN and a partner terminal unit, ~~such as another gateway unit and a network facsimile apparatus, on the packet network, wherein an allocation demand for required network bandwidth is issued to a gatekeeper unit on the packet network prior to starting a communication, the communication through the packet network is performed within an allocated network bandwidth allocated by the gatekeeper unit in response to the allocation demand, while a packetized facsimile control signal received from the partner terminal unit through the packet network is converted in real-time into a modem signal and transmitted to the facsimile apparatus through the PSTN, and a facsimile control signal received from the facsimile apparatus through the PSTN as a modem signal is packetized in real-time and transmitted to the partner terminal unit through the packet network,~~ comprising:

~~transmission speed/network bandwidth adjusting means for adjusting a~~
communication controller configured to adjust the required network bandwidth corresponding to a transmission speed set up between the facsimile apparatus and the partner terminal unit to become equal to or narrower than the allocated network bandwidth.

2. (currently amended) The gateway unit as claimed in claim 1, wherein the ~~transmission speed/network bandwidth adjustment means adjusts such that the required~~

~~network bandwidth becomes equal to or narrower than the allocated network bandwidth~~ the communication controller adjusts the required network bandwidth by demanding network bandwidth allocation with a predetermined network bandwidth specified when the demand for the network bandwidth allocation is issued to the gatekeeper unit prior to starting a communication.

3. (currently amended) The gateway unit as claimed in claim 1, wherein the ~~transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth,~~ communication controller adjusts the required network bandwidth by demanding a reassignment of network bandwidth of the gatekeeper unit where the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the receiving side, or from the facsimile apparatus in the PSTN on the receiving side is wider than the allocated network bandwidth allocated by the gatekeeper unit at starting the communication.

4. (currently amended) The gateway unit as claimed in claim 1, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth~~ ~~where~~ when the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the receiving side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by altering information

content indicative of the transmission speed in the facsimile control signal to a transmission speed that requires equal to or narrower than the allocated network bandwidth, converting the facsimile control signal into a modem signal and transmitting the modem signal to the facsimile apparatus in the PSTN on the transmitting side.

5. (currently amended) The gateway unit as claimed in claim 1, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth,~~ where when the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the facsimile apparatus in the PSTN on the receiving side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by altering information content indicative of the transmission speed in the facsimile control signal to a transmission speed that requires bandwidth equal to or narrower than the allocated network bandwidth, converting the facsimile control signal into a packet and transmitting the packet to the partner terminal unit in the packet network.

6. (currently amended) The gateway unit as claimed in claim 1, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network,~~ where when the required network corresponding to a predetermined transmission speed provided by the facsimile control signal received from the facsimile apparatus in the PSTN on the transmitting side is wider than the allocated network bandwidth, the communication

controller adjusts the required network bandwidth by transmitting a dummy training failure signal to the facsimile apparatus on the transmission side in response to a predetermined modem training signal received from the facsimile apparatus in the PSTN on the transmitting side, until the required network bandwidth corresponding to a transmission speed provided by the facsimile control signal that will be retransmitted from the facsimile apparatus on the transmitting side becomes equal to or narrower than the allocated network bandwidth.

7. (currently amended) The gateway unit as claimed in claim 1, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth,~~ where when the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the transmitting side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by transmitting a dummy training failure signal to the partner terminal unit on the transmitting side in response to a modem training signal received from the partner terminal unit in the packet network on the transmitting side, until the required network bandwidth corresponding to a transmission speed provided by the facsimile control signal that will be retransmitted from the partner terminal unit on the transmitting side becomes equal to or narrower than the allocated network bandwidth.

8. (original) A gateway unit that can be connected to a packet network, comprising:
communication control means that enables a communication between a

communication apparatus connected to the packet network and another communication apparatus connected to a PSTN, by demanding network bandwidth allocation to a gatekeeper unit in the packet network; and

transmission speed/network bandwidth adjustment means that adjusts required network bandwidth corresponding to a transmission speed set up by the communication apparatus in the packet network and the communication apparatus in the PSTN, to become equal to or narrower than network bandwidth allocated by the gatekeeper unit.

9. (original) A gateway unit that can be connected to a packet network, comprising:
network facsimile communication control means that enables a facsimile communication with a communication apparatus in the packet network;

communication control means that enables a communication between a communication apparatus connected to the packet network and another communication apparatus connected to a PSTN, by demanding network bandwidth allocation to a gatekeeper unit in the packet network; and

transmission speed/network bandwidth adjustment means that adjusts required network bandwidth corresponding to a transmission speed set up by the communication apparatus in the packet network and the communication apparatus in the PSTN, to become equal to or narrower than network bandwidth allocated by the gatekeeper unit.

10. (original) A gateway unit that can be connected to a packet network, comprising:
facsimile communication control means that enables a facsimile communication with a communication apparatus in a PSTN;

communication control means that enables a communication between a communication apparatus connected to the packet network and another communication apparatus connected to the PSTN, by demanding network bandwidth allocation of a gatekeeper unit in the packet network; and

transmission speed/network bandwidth adjustment means that adjusts required network bandwidth corresponding to a transmission speed set up by the communication apparatus in the packet network and the communication apparatus in the PSTN, to become equal to or narrower than network bandwidth allocated by the gatekeeper unit.

11. (currently amended) A gateway controlling method which controls a gateway unit that is connected to a packet network and a PSTN and realizes a real-time facsimile communication between a facsimile apparatus on the PSTN and a partner terminal unit, ~~such as another gateway unit and a network facsimile apparatus, on the packet network, wherein a demand for network bandwidth allocation is issued to a gatekeeper unit on the packet network prior to starting a communication, the communication through the packet network is performed within an allocated network bandwidth allocated by the gatekeeper unit in response to the demand, while a packetized facsimile control signal received from the partner terminal unit through the packet network is converted in real time into a modem signal and transmitted to the facsimile apparatus through the PSTN, and a facsimile control signal received from the facsimile apparatus through the PSTN as a modem signal is packetized in real time and transmitted to the partner terminal unit through the packet network,~~ comprising:

a controlling method configured to control the gateway unit which performs an adjustment such that required network bandwidth corresponding to a transmission speed set up

between the facsimile apparatus and the partner terminal unit becomes equal to or narrower than the allocated network bandwidth.

12. (original) The gateway controlling method as claimed in claim 11, wherein the adjustment is performed such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth by demanding network bandwidth allocation with a predetermined network bandwidth specified when the demand for network bandwidth allocation is issued to the gatekeeper unit prior to starting a communication.

13. (original) The gateway controlling method as claimed in claim 11, wherein the adjustment is performed such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth, by demanding the required network bandwidth of the gatekeeper unit for a reassignment of network bandwidth where the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the receiving side, or from the facsimile apparatus in the PSTN on the receiving side is wider than the allocated network bandwidth allocated by the gatekeeper unit at starting the communication.

14. (original) The gateway controlling method as claimed in claim 11, wherein the adjustment is performed such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth where the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal

received from the partner terminal unit in the packet network on the receiving side is wider than the allocated network bandwidth, by altering information content indicative of the transmission speed in the facsimile control signal to a transmission speed that requires equal to or narrower than the allocated network bandwidth, converting the facsimile control signal into a modem signal and transmitting the modem signal to the facsimile apparatus in the PSTN on the transmitting side.

15. (original) The gateway controlling method as claimed in claim 11, wherein the adjustment is performed such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth, where the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the facsimile apparatus in the PSTN on the receiving side is wider than the allocated network bandwidth, by altering information content indicative of the transmission speed in the facsimile control signal to a transmission speed that requires bandwidth equal to or narrower than the allocated network bandwidth, converting the facsimile control signal into a packet and transmitting the packet to the partner terminal unit in the packet network.

16. (original) The gateway controlling method as claimed in claim 11, wherein the adjustment is performed such that the required network bandwidth becomes equal to or narrower than the allocated network, where the required network corresponding to a predetermined transmission speed provided by the facsimile control signal received from the facsimile apparatus in the PSTN on the transmitting side is wider than the allocated network bandwidth, by transmitting a dummy training failure signal in response to a predetermined

modem training signal received from the facsimile apparatus in the PSTN on the transmitting side, until the required network bandwidth corresponding to a transmission speed provided by the facsimile control signal that will be retransmitted from the facsimile apparatus on the transmitting side becomes equal to or narrower than the allocated network bandwidth.

17. (original) The gateway controlling method as claimed in claim 11, wherein an adjustment is performed such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth, where the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the transmitting side is wider than the allocated network bandwidth, by transmitting a dummy training failure signal to the partner terminal unit on the transmitting side in response to a modem training signal received from the partner terminal unit in the packet network on the transmitting side, until the required network bandwidth corresponding to a transmission speed provided by the facsimile control signal that will be retransmitted from the partner terminal unit on the transmitting side becomes equal to or narrower than the allocated network bandwidth.

18. (currently amended) A communication system that realizes a real-time facsimile communication between a facsimile apparatus on a PSTN and a partner terminal unit, ~~such as another gateway unit and a network facsimile apparatus, on a packet network, wherein a gateway unit connected to the packet network and the PSTN issues a demand for network bandwidth allocation to a gatekeeper unit on the packet network prior to starting a communication, and the communication through the packet network is performed within an allocated network bandwidth~~

~~allocated by the gatekeeper unit in response to the demand, while a packetized facsimile control signal received from the partner terminal unit through the packet network is converted in real-time into a modem signal and transmitted to the facsimile apparatus through the PSTN, and a facsimile control signal received from the facsimile apparatus through the PSTN as a modem signal is packetized in real-time and transmitted to the partner terminal unit through the packet network,~~ the gateway unit comprising:

~~transmission speed/network bandwidth adjusting means for adjusting~~ a communication controller configured to adjust required network bandwidth corresponding to a transmission speed set up between the facsimile apparatus and the partner terminal unit to become equal to or narrower than the allocated network bandwidth.

19. (currently amended) The communication system as claimed in claim 18, wherein the ~~transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth~~ communication controller adjusts the required network bandwidth by demanding network bandwidth allocation with a predetermined network bandwidth specified when the demand for network bandwidth allocation is issued to the gatekeeper unit prior to starting a communication.

20. (currently amended) The communication system as claimed in claim 18, wherein the ~~transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth,~~ communication controller adjusts the required network bandwidth by demanding a

reassignment of network bandwidth of the gatekeeper unit against the allocated network bandwidth where the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the receiving side, or from the facsimile apparatus in the PSTN on the receiving side is wider than the allocated network bandwidth allocated by the gatekeeper unit at starting the communication.

21. (currently amended) The communication system as claimed in claim 18, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth~~ where when the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the receiving side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by altering information content indicative of the transmission speed in the facsimile control signal to a transmission speed that requires equal to or narrower than the allocated network bandwidth, converting the facsimile control signal into a modem signal and transmitting the modem signal to the facsimile apparatus in the PSTN on the transmitting side.

22. (currently amended) The communication system as claimed in claim 18, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network bandwidth,~~ where when the required network bandwidth corresponding to a predetermined transmission

speed provided by the facsimile control signal received from the facsimile apparatus in the PSTN on the receiving side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by altering information content indicative of the transmission speed in the facsimile control signal to a transmission speed that requires bandwidth equal to or narrower than the allocated network bandwidth, converting the facsimile control signal into a packet and transmitting the packet to the partner terminal unit in the packet network.

23. (currently amended) The communication system as claimed in claim 18, wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network bandwidth becomes equal to or narrower than the allocated network, where~~ when the required network corresponding to a predetermined transmission speed provided by the facsimile control signal received from the facsimile apparatus in the PSTN on the transmitting side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by transmitting a dummy training failure signal in response to a predetermined modem training signal received from the facsimile apparatus in the PSTN on the transmitting side, until the required network bandwidth corresponding to a transmission speed provided by the facsimile control signal that will be retransmitted from the facsimile apparatus on the transmitting side becomes equal to or narrower than the allocated network bandwidth.

24. (currently amended) The communication system as claimed in claim 18 wherein ~~the transmission speed/network bandwidth adjustment means adjusts such that the required network~~

~~bandwidth becomes equal to or narrower than the allocated network bandwidth, where~~ when the required network bandwidth corresponding to a predetermined transmission speed provided by the facsimile control signal received from the partner terminal unit in the packet network on the transmitting side is wider than the allocated network bandwidth, the communication controller adjusts the required network bandwidth by transmitting a dummy training failure signal to the partner terminal unit on the transmitting side in response to a modem training signal received from the partner terminal unit in the packet network on the transmitting side, until the required network bandwidth corresponding to a transmission speed provided by the facsimile control signal that will be retransmitted from the partner terminal unit on the transmitting side becomes equal to or narrower than the allocated network bandwidth.

25. (new) A gateway unit comprising:

a communication part configured to be communicable with an apparatus via a public switched telephone network (PSTN) and with a terminal unit via a packet network, so as to enable a real-time facsimile communication between the apparatus and the terminal unit; and

an adjusting part configured to adjust a required network bandwidth, corresponding to a transmission speed set up between the apparatus and the terminal unit, to become narrower than or equal to an allocated network bandwidth that is allocated for a communication in the packet network.

26. (new) The gateway unit as claimed in claim 25, wherein the adjusting part adjusts the required network bandwidth by requesting a network bandwidth allocation which specifies a predetermined network bandwidth prior to starting a communication, with respect to a gatekeeper

unit that is coupled to the packet network and allocates the allocated network bandwidth.

27. (new) The gateway unit as claimed in claim 1, wherein an allocation demand for required network bandwidth is issued to a gatekeeper unit on the packet network prior to starting a communication, the communication through the packet network is performed within an allocated network bandwidth allocated by the gatekeeper unit in response to the allocation demand, while a packetized facsimile control signal received from the partner terminal unit through the packet network is converted in real-time into a modem signal and transmitted to the facsimile apparatus through the PSTN, and a facsimile control signal received from the facsimile apparatus through the PSTN as a modem signal is packetized in real-time and transmitted to the partner terminal unit through the packet network.

28. (new) The gateway controlling method as claimed in claim 11, wherein a demand for network bandwidth allocation is issued to a gatekeeper unit on the packet network prior to starting a communication, the communication through the packet network is performed within an allocated network bandwidth allocated by the gatekeeper unit in response to the demand, while a packetized facsimile control signal received from the partner terminal unit through the packet network is converted in real-time into a modem signal and transmitted to the facsimile apparatus through the PSTN, and a facsimile control signal received from the facsimile apparatus through the PSTN as a modem signal is packetized in real-time and transmitted to the partner terminal unit through the packet network.

29. (new) The communication system as claimed in claim 18, wherein a gateway unit

connected to the packet network and the PSTN issues a demand for network bandwidth allocation to a gatekeeper unit on the packet network prior to starting a communication, and the communication through the packet network is performed within an allocated network bandwidth allocated by the gatekeeper unit in response to the demand, while a packetized facsimile control signal received from the partner terminal unit through the packet network is converted in real-time into a modem signal and transmitted to the facsimile apparatus through the PSTN, and a facsimile control signal received from the facsimile apparatus through the PSTN as a modem signal is packetized in real-time and transmitted to the partner terminal unit through the packet network.